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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,594	07/23/2003	Katsushi Sakai	826.1883	7621

21171 7590 11/30/2005

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EXAMINER	
MARC, MCDIEUNEL	
ART UNIT	**PAPER NUMBER**
3661	

DATE MAILED: 11/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/624,594	SAKAI, KATSUSHI	
	Examiner	Art Unit	
	McDieunel Marc	3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *9/19/2005*.

2a)☒ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *4,8 and 12* is/are allowed.

6)☒ Claim(s) *1-3,5,6 and 9-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-12 are presented for examination.

2. The rejection to claims 4, 8 and 12, is **withdrawn**.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 2-3, 6-7 and 10-11 are rejected under 35 U.S.C. 102(b) as being anticipated by **Han** (U.S. Pat. No. **5,534,762**).

As per claims 2 and 10, Han teaches a power supply control device for a mobile robot system with a drive mechanism and a battery (see figs 4 and 7), comprising: a charging/discharging circuit with a current path that branches current from a power supply adaptor to the battery and to the drive mechanism (see abstract, figs. 4 and 7), supplying current to the drive mechanism from the power supply adaptor while charging the battery with current supplied from the power supply adaptor (see figs. 4 and 7); and a control circuit instructing the charging/discharging circuit to charge the battery, and permitting an operation of the drive mechanism during charge (see fig. 7 and col. 6, lines 39-42).

As per claims 3 and 11, Han teaches a power supply control device for a mobile robot system with a battery and a control logic unit (see figs. 4 and 7 as noted above), comprising: a charging/discharging circuit with a current path that branches current from a power supply adaptor to the battery and to the logic unit, charging the battery with current supplied from the power supply adaptor when the logic unit is not operating (see abstract, fig. 7 and col. 6, lines 39-42 as noted above), and supplying current to the logic unit from the power supply adaptor while charging the battery with current supplied from the power supply adaptor when the logic unit is operating (see fig. 7); and a control circuit instructing the charging/discharging circuit to charge the battery (see figs. 4 and 7 as noted above).

As per claim 6, Han teaches a power supply control method for a mobile robot system with a drive mechanism and a battery (see figs. 4 and 7), comprising supplying current to the drive mechanism from a power supply adaptor while charging the battery with current supplied from the power supply adaptor by using a current path that branches current from the power supply adaptor to the battery and to the drive mechanism (see abstract figs. 4, 7 and 8[A-C]).

As per claim 7, Han teaches a power supply control method for a mobile robot system with a battery and a control logic unit (see figs. 4 and 7), comprising charging the battery with current supplied from a power supply adaptor by using a current path that branches current from the power supply adaptor to the battery and to the logic unit when the logic unit is not operating (see figs. 4, 7 and abstract), not operating logic being taken as stationary while charging, and supplying current to the logic unit from the power supply adaptor while charging the battery with current supplied from the power supply adaptor by using the current path (see abstract, figs. 4 and 7) when the logic unit is operating has been considered as moving.

Claim Rejections - 35 USC § 103

5. Claims 1 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Han** in view of **Ueno *et al.*** (U.S. Pat. No. **006480761B2**) and **Song *et al.*** (U.S. PG. Pub. No. **20030028993A1**).

As per claims 1 and 9, **Han** teaches substantially a charge induction system of a robot having a power supply control device (see fig. 7, element 110) for a mobile robot system with a travel mechanism and a battery (see fig. 4, elements 1 and 10), comprising: a charging/discharging circuit electrically controlling charge and discharge of the battery (see fig. 4, elements 110, 40 and 10); a control circuit checking remaining power in the battery (see fig. 4, element 30), when the control circuit determines that the remaining power is insufficient, prohibiting an operation of the travel mechanism (see abstract), and instructing the charging/discharging circuit to charge the battery (see abstract), and when the control circuit determines that the remaining power is sufficient, permitting the operation of the travel mechanism (see figs. 8 [A-C]); and a computer executing a program controlling a series of robot system operations (see fig. 7 and col. 6, lines 39-42). Han does not specifically teach the limitations of issuing an alarm indicating an insufficient remaining power and on receipt of the alarm from the control circuit, issuing a charge request message to a user.

However, Ueno *et al.* teaches a battery-driven legged robot including of issuing an alarm indicating an insufficient remaining power and on receipt of the alarm from the control circuit (see col. 4, lines 12-19).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the robot type of Han with the robot type of Ueno *et al.*, because this modification would have enhanced Han' s robot in order to indicate that the battery has decreased below a predetermined value, thereby improving the efficiency and the reliability of the power supply control for mobile robot.

Although, Han and Ueno *et al.* teach essential features of the invention substantially as claimed, but they do not specifically teach issuing a charge request message to a user.

However, Song *et al.* teaches issuing a charge request message to a user [section 0053].

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the robot types of Han and Ueno *et al.* with the robot type of Song *et al.*, because this modification would have enhanced Han' s and Ueno' s *et al.* robot in order to process a series of jobs that allow a menu selected by the user to be carried out by the robot cleaner, thereby improving the efficiency and the reliability of the power supply control for mobile robot.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Han** in view of **Song *et al.***.

As per claim 5, Han also teaches a power supply control method for a mobile robot system with a travel mechanism and a battery (see figs. 4 and 7 as noted above), comprising: checking remaining power in the battery prohibiting an operation of the travel mechanism (see fig. 7 as noted above); when the checking determines that the remaining power is insufficient (see figs. 4 and 7 as noted above), and charging the battery when the user turns a power supply adaptor on; and permitting the operation of the travel mechanism when the checking determines that the remaining power is sufficient (see figs 4 and 7 as noted above). Han does not specifically teach issuing a charge request message to a user.

However, Song *et al.* teaches issuing a charge request message to a user [section 0053].

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the robot type of Han with the robot type of Song *et al.*, because this modification would have enhanced Han' s robot in order to process a series of jobs that allow a menu selected by the user to be carried out by the robot cleaner, thereby improving the efficiency and the reliability of the power supply control for mobile robot.

Allowable Subject Matter

7. Claims 4, 8 and 12 are allowed.

The prior art of record fail to teach or fairly suggest with respect to claims 4, 8 and 12, a mobile robot system having a switch detecting whether the computer is driven has been considered moving, and when the computer is not driven; automatically cutting off power supply to the drive mechanism from the battery when the computer is not driven.

Response to Arguments

As to the reference not teaching issuing a charge request message (Song et al. teaches in section [0053] " A battery charge level detecting portion 20 detects the charge level of the battery 19, and generates a signal for charge request when the detected charge level reaches a predetermined lower limit."), note that generating signals implies indicator/message to the user/operator.

As to the reference not teaching supplying current to the drive mechanism from the power supply adaptor while charging the battery with current supplied from the power supply adaptor (Han' s teaches in col. 4, lines 53-56 " Charging means 90 charges the battery 91 during travel of the robot cleaner 1 level of change of the battery

91 is decreased to below a predetermined level."), note the charging has been done during/while traveling.

As to the reference not teaching supplying current toe the logic unit from the power supply adaptor while charging the battery with current supplied from the power supply adaptor when the logic unit is operating (see Han' s col. 4, lines 53-56, as noted above and claim 1).

Conclusion

8. Applicant's arguments filed 9/19/2005 have been fully considered but they are not persuasive.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to McDieunel Marc whose telephone number is (571) 272-6964. The examiner can normally be reached on 6:30-5:00 Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

McDieunel Marc

Tuesday, March 29, 2005

MM/

THOMAS G. BLACK
SUPERVISORY PATENT EXAMINER
GROUP 3661